



## Mosquito Life Cycle Activity

### INTRODUCTION

This activity is an investigation of the mosquito life cycle and complements the Click & Learn [Stopping Mosquito-Borne Disease](#). After initial set-up, you will need only a few minutes of observation each day, but you will need to make **daily** observations for 8 to 14 days.

Understanding the mosquito life cycle is essential to effective pest control and disease prevention strategies. In this activity, you will rear mosquitoes, observe their progression through life stages, record how long it takes adults to emerge, and develop a claim about how communities might prevent the spread of disease.

### MATERIALS

- Plastic emergence chamber
- Mosquito eggs or larvae
- Mosquito food
- Sugar cube (food for adult mosquitoes)
- Magnifying glass

### PROCEDURE

#### Assemble and Place Emergence Chamber

1. Place your emergence chamber where it can sit relatively undisturbed for up to 2 weeks. Avoid temperature extremes.
2. The day before you are ready to start the activity (Day 0), fill the bottom container with water to a depth of  $\frac{1}{2}$  to 1 inch. Let stand overnight to allow chlorine in the water to dissipate.
3. If you were able to obtain eggs, use a magnifying glass to count and record the number of eggs.
4. Place the eggs or larvae in the water in the bottom container. Add a small pinch of mosquito food. Swirl the water gently to moisten the food. Snap on the connecting funnel piece with the narrow end of the funnel pointing up.

#### Record Your Results

- Keep a record of your daily observations. **Each day, record 1) the room temperature at the location of the emergence chamber and 2) the number of larvae, pupae, and adults.** Eggs hatch into larvae in about 1–2 days. Larvae start to form pupae in 4–7 days. It is hard to see the larvae for the first 2 days, so use the magnifying glass. Feed a small pinch of food on day 3.
- Before the first pupae appear, attach the upper container. Make sure the plastic pieces are snapped on securely. To prevent adult mosquitoes from escaping, do not remove the upper container after this point.
- Place the sugar cube onto the mesh. Adult mosquitoes will feed on the sugar cube.
- Adults will emerge 1–2 days after pupation. Determine the sex of the adults by using the magnifying glass to observe their antennae. **Record the number of male and female mosquitoes.**
- After all the adults have emerged, put the whole emergence chamber in the freezer overnight. Freezing will anesthetize the adults, and death will follow. **Do not release live mosquitoes, whether purchased or collected.**

Male *Aedes albopictus* with bushy antennae



Female *Aedes albopictus* with less bushy antennae



**Analyze Your Results**

Using the information you collected from your daily observations, complete the chart below. Make note of any changes (for example, changes in the timeline described in the procedure, changes in survival, or changes in temperature) and the what the significance of these changes might be.

	Data	Notes/changes	Analysis/significance
Total number of eggs			
Average number of days until eggs hatch			
Average number of days until pupal stage			
Total number of pupae			
Number of days until male adults begin to emerge			
Number of days until female adults begin to emerge			
Total number of adult females			
Total number of adult males			
Average temperature for the location of the emergence chamber			

**Conclusions and Implications**

Using evidence from the data you collected, develop a claim to explain how people in a community could determine whether there is a mosquito problem where they live and how they might slow or prevent the spread of mosquito-borne disease.